User's Manual

# AUTOSAR MCAL R4.0.3
## User's Manual

PORT Driver Component Ver.1.0.4

Generation Tool User's Manual

Target Device:
RH850/P1x-C



Renesas Electronics
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Rev.1.02 Jun 2017

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## Abbreviations and Acronyms

| Abbreviation / Acronym | Description |
|---|---|
| AUTOSAR | AUTomotive Open System ARchitecture |
| BSWMDT | Basic Software Module Description Template |
| ECU | Electronic Control Unit |
| ICU | Input Capture Unit |
| Id/ID | Identifier |
| INTP | Interrupt |
| MCAL | Micro Controller Abstraction Layer |
| NMI | Non Maskable Interrupt |
| XML | eXtensible Mark-up Language |

## Definitions

| Terminology | Description |
|---|---|
| BSWMDT File | This file is the template for the Basic Software Module Description. |
| Configuration XML File | This file contains the setting of command line options. |
| ECU Configuration Description File | Input file to MCAL Code Generator Tool. It is generated by ECU Configuration Editor. |
| Sl.No | Serial Number. |

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# Chapter 1 Introduction

The PORT Driver component provides the service for initializing the whole PORT structure of the microcontroller.

The PORT Driver Component comprises of two sections as Embedded Software and the MCAL Code Generator Tool to achieve scalability and configurability.

The document describes the PORT module specific inputs and outputs of the MCAL Code Generator Tool that is the common code generator engine used for the generation of the configuration code for all MCAL modules. MCAL Code Generator Tool is a command line tool that extracts information from ECU Configuration Description File, BSWMDT File and generates PORT Driver C Source and C Header files (Port_PBcfg.c and Port_Cfg.h, Port_Cbk.h, Port_Hardware.c and Port_Hardware.h).

This document contains information on the options, input and output files of the MCAL Code Generator Tool. In addition, this manual covers a step-by-step procedure for the usage of MCAL Code Generator Tool.

ECU Configuration Description File contains information about PORT General Configuration, Port Pin Configurations.

## 1.1 Document Overview

This user manual is organized as given in the table below:

**Table 1-1 Document Overview**

| Section | Contents |
|---|---|
| Section 1 (Introduction) | Provides an introduction to the document and explains how information is organized in this manual. |
| Section 2 (Reference) | Provides a list of documents referred while developing this document. |
| Section 3 (Code Generation Overview) | Provides the Code Generation Overview. |
| Section 4 (Input Files) | Provides information about ECU Configuration Description File. |
| Section 5 (Output Files) | Explains the output files that are generated by MCAL Code Generator Tool. |
| Section 6 (Precautions) | Contains precautions to be taken during configuration of ECU Configuration Description File. |
| Section 7 (User Configuration Validation) | Describes about user configuration validation done by the MCAL Code Generator Tool. |
| Section 8 (Configuration Overview) | Provides Container Overview. |
| Section 9 (Messages) | Describes all the Error/Warning/Information messages of R4.0.3 which helps the user to understand the probable reason for the same. |

# Chapter 2 Reference

## 2.1 Reference Documents

The following table lists the documents referred to develop this document:

**Table 2-1 Reference Documents**

| Sl.No. | Title | Version |
|---|---|---|
| 1. | AUTOSAR_SWS_PortDriver.pdf | 3.2.0 |
| 2. | MCAL_CodeGenerator_Tool_UserManual.pdf | 1.7 |
| 3. | R20UT3828EJ0101-AUTOSAR.pdf | 1.0.3 |

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# Chapter 3 Code Generation Overview

Code Generation overview is shown below.

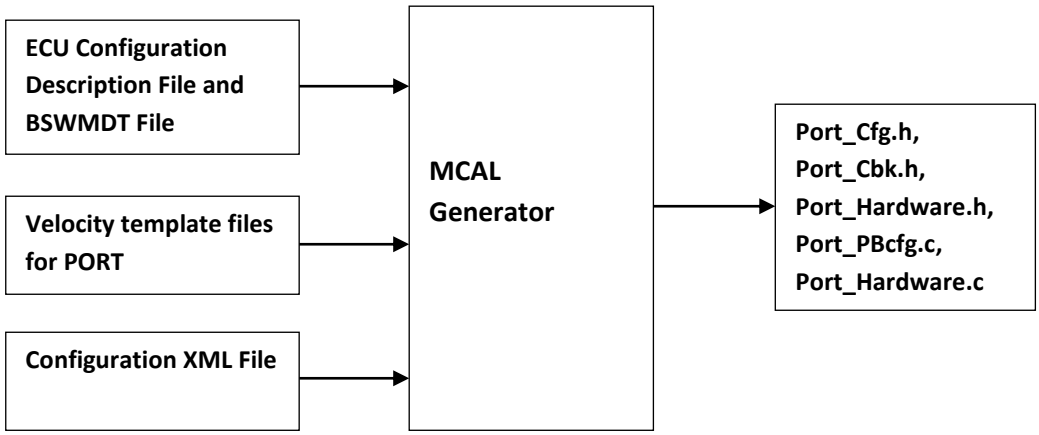


**Figure 3-1 Overview of Code Generation**

- ECU Configuration Description File (.arxml):
  This file will contain PORT Driver specific configuration information. This file should be generated by AUTOSAR specified Configuration Editor.

- BSWMDT File (.arxml):
  MCAL Code Generator Tool uses “Common Published Information” from PORT module specific BSWMDT File. PORT module specific BSWMDT File should not be updated manually since it is “Static Configuration” file.

- Velocity template files:
  Port_PBcfg_c.vm, Port_Cbk_h.vm, Port_Cfg_h.vm, Port_Hardware_h.vm, Port_Hardware_c.vm, Port_Validate.vm
  They are interpreted by the MCAL Code Generator Tool in order to provide user input validation and generate the final output file needed by the AUTOSAR configuration chain .They are the "logic" of the Code Generator.

- Configuration XML File (.xml):
  This file is used to specify which velocity template to use and their location and the name of the output file generated

For the error free input file, the MCAL Code Generator Tool generates the following output files: Port_Cfg.h, Port_Cbk.h, Port_Hardware.h, Port_PBcfg.c and Port_Hardware.c and displays appropriate context sensitive error messages for wrong input and exits.

ECU Configuration Description File can be created or edited using ECU Configuration Editor.

Concept of execution MCAL Code Generator Tool is as follows:

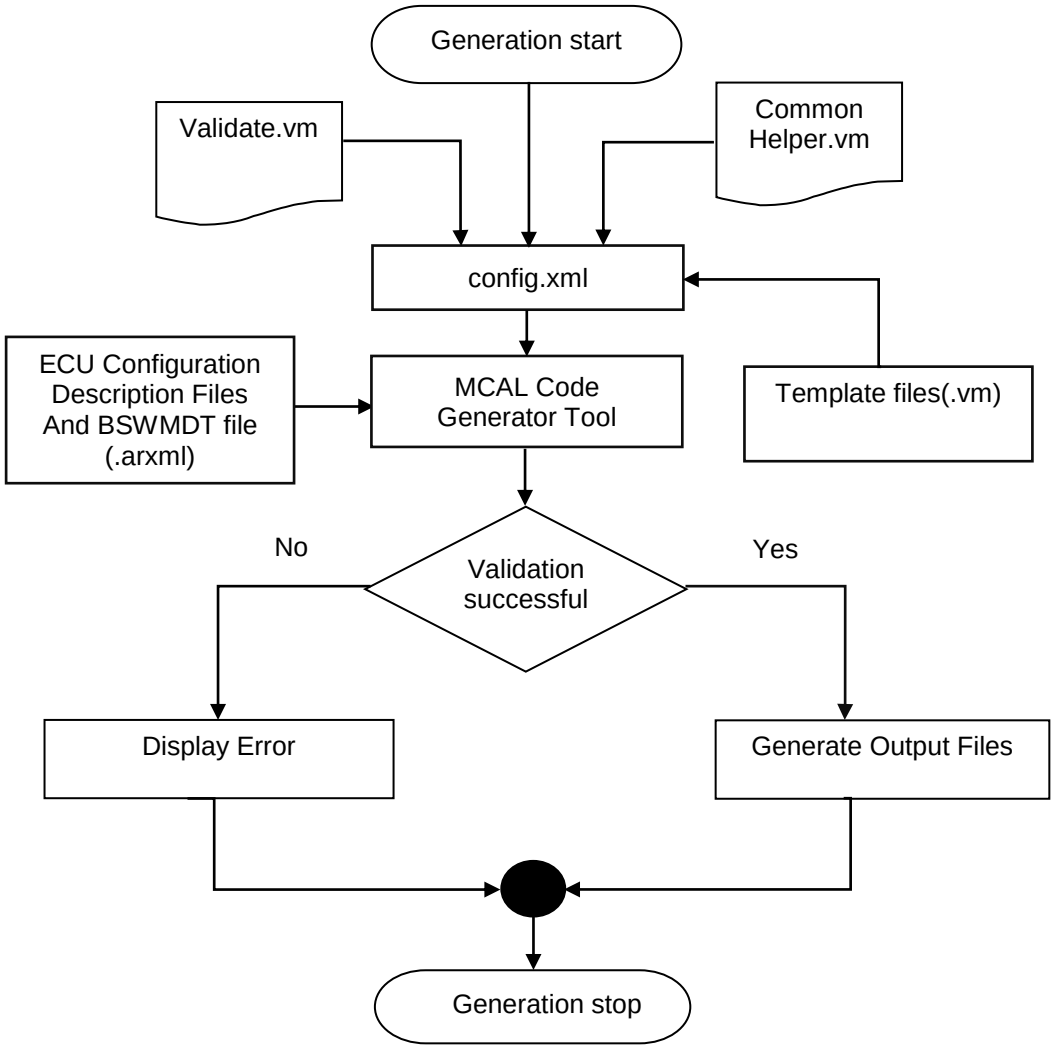


**Figure 3-2 Flow-Diagram of Code Generation**

The module “Validate” will validate the configuration (contents of ECU Configuration Description File(s) as input). If there are incorrect values or incorrect dependencies, the MCAL Code Generator Tool l will display error, warning and information messages. In case of errors, the MCAL Code Generator Tool will abort the execution.

Port_Cfg_h.vm / Port_PBcfg_c.vm will generate compiler switch / structures necessary to the AUTOSAR Configuration chain and vendor specific parameters.

Port_Cbk_h.vm will generate Prototype Declarations for Port Callback Notification Functions.

Port_Hardware_h.vm / Port_Hardware_c.vm will generate hardware related info (defines number of actual instances / channels used / structure to access to the I/O mapped peripheral).

**Remark** Please refer the general MCAL Code Generator Tool User Manual (MCAL_CodeGenerator_Tool_UserManual.pdf) and

GettingStarted_MCAL_Drivers_X1x.pdf
(R20UT3828EJ0101-AUTOSAR.pdf)
for details about the tool command line options.

# Chapter 4 Input Files

MCAL Code Generator Tool will accept the config.xml file which has paths to the code generator template files for generating PORT Driver files. MCAL Code Generator Tool accepts ECU Configuration Description File(s), PORT Configuration XML file and BSWMDT File as input. MCAL Code Generator Tool needs information about PORT Driver component. Hence ECU Configuration Description File should contain configuration of PORT Driver component. MCAL Code Generator Tool ignores any other AUTOSAR component configured in the ECU Configuration Description File. ECU Configuration Description File can be generated using configuration editor.

ECU Configuration Description File must comply with AUTOSAR standard ECU Configuration Description File format.

**Remark** The detailed explanation about the parameters and containers are found in Parameter Definition File.

# Chapter 5 Output Files

MCAL Code Generator Tool generates configuration details in C Header and C Source files (Port_Cfg.h, Port_Cbk.h, Port_PBcfg.c, Port_Hardware.c and Port_Hardware.h).

The content of each output file is given in the table below:

**Table 5-1 Output Files Description**

| Output File | Details |
|---|---|
| Port_Cfg.h | This file contains the macro definitions for general configuration, total number of Port Pins configured and configuration set handles. This file also includes the Port Pin handles for each configuration set. |
| Port_Cbk.h | This file contains Prototype Declarations for Port callback Notification Functions. |
| Port_PBcfg.c | This file contains structure for Port Pin Initialization, Port Pin Direction Switch and Port Pin Direction Refresh during runtime. |
| Port_Hardware.c | This file contains the definitions for addresses of the hardware registers used in the PORT Driver Module. |
| Port_Hardware.h | This file contains the declarations for addresses of the hardware registers used in the PORT Driver Module. |

**Remark** Output files generated by MCAL Code Generator Tool shall not be modified or edited manually.

# Chapter 6 Precautions

- ECU Configuration Description File and BSWMDT File must comply with AUTOSAR standard for R4.0.3 ECU Configuration Description File and BSWMDT File respectively.
- ECU Configuration Description File must contain PORT module description files.
- Configuration XML File should contain the file extension '.xml'.
- Configuration XML File (config.xml file) should convey the Velocity template files location and output file location.
- All the function names and the string values configured should follow C syntax for variables. It can only contain alphanumeric characters and "_". It should start with an alphabet.
- If the output files generated by MCAL Code Generator Tool are modified externally, then they may not produce the expected results or may lead to error/warning/Information messages.
- Short Name for a container should be unique within a name space.
- An error free ECU Configuration Description File generated from configuration editor has to be provided as input to the MCAL Code Generator Tool. Otherwise MCAL Code Generator Tool may not produce the expected results or may lead to "errors/warnings/information messages".
- If no configuration of certain port filter is done within this Port Module, the device specific default settings will take effect on this filter.
- If user selects the alternate signal in the port group container, then the respective port filter container should be configured. For example: If signal NMI is selected in the port group container respective filter group container has to be configured.
- In case of multiple configuration sets, if any filter is configured in one configuration set, then the same filter should be configured across all configured multiple configuration sets.
- In post-build time, sub containers of PortFilterGroupConfig containers should not be added or deleted.
- Edge/Level settings for External Interrupt (INTP) signals can be overwritten by ICU component to change the default activation type and the type of activation at run-time.

**Remark** Please refer the PORT Component User Manual (R20UT3653EJ0102-AUTOSAR.pdf) for deviations from AUTOSAR.

# Chapter 7 User Configuration Validation

This section provides help to analyze the error, warning and information messages displayed during the execution of MCAL Code Generator Tool. It ensures conformance of input file with syntax and semantics. It also performs validation on the input file for correctness of the data.

For more details on list of Error/Warning/Information messages that are displayed as a result of input file(s) validation, refer Chapter 9 “*Messages*”.

MCAL Code Generator Tool displays error or warning or information messages when the user has configured incorrect inputs. The format of Error/Warning/ Information message is as shown below.

<message_type>_<vendor_id>_<module_id>_<message_id>:<message_cont

ent>.

where,

- <message_type> : ERR/WARNING/INFO
- < vendor_id > : vendor Id = 59
- < module_id > : 124 - PORT Driver Module id (124) for user configuration checks.
- < Message_id.> : 001-999
- <message_content>: Message content provides information about error or warning or information displayed when the user has configured incorrect inputs.

  File Name’ and ‘Path’ need not be present for all Error/Warning/Information messages

  File Name: Name of the file in which the error has occurred

  Path: Absolute path of the container in which the parameter is present

# Chapter 8 Configuration Overview

## 8.1 Container Overview

The following figure represents container overview.

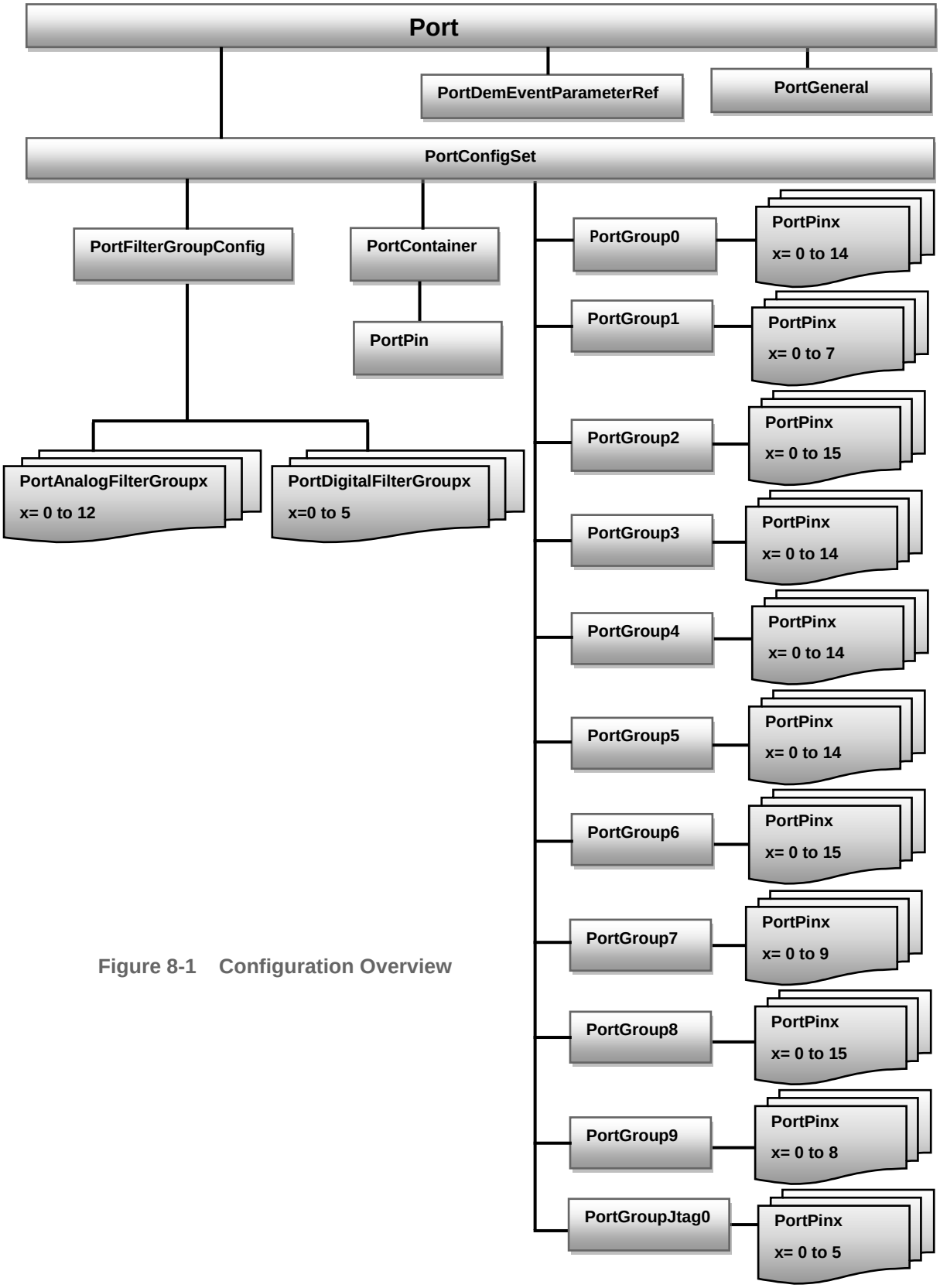


**Figure 8-1 Configuration Overview**

### 8.1.1 Pre-Compile Configurable Parameters

**Table 8-1 Pre-Compile Configurable Parameters**

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| PortGeneral | PortDevErrorDetect | Boolean | TRUE / FALSE | Switches the Development Error Detection and Notification on or off.<br>True: Development Error Detection and Notification is enabled.<br>False: Development Error Detection and Notification is disabled. |
| | PortSetPinDirectionApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the use of the function Port_SetPinDirection().<br>True: Enabled - Function Port_SetPinDirection () is available.<br>False: Disabled - Function Port_SetPinDirection () is not available. |
| | PortSetPinDefaultDirectionApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the use of the function Port_SetPinDefaultDirection ().<br>True: Enabled - Function Port_SetPinDefaultDirection () is available.<br>False: Disabled - Function Port_SetPinDefaultDirection () is not available. |
| | PortSetPinModeApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the use of the function Port_SetPinMode ().<br>True: Enabled - Function Port_SetPinMode () is available.<br>False: Disabled - Function Port_SetPinMode() is not available. |
| | PortSetPinDefaultModeApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the use of the function PortSetPinDefaultModeApi ().<br>True: Enabled–Function PortSetPinDefaultModeApi () is available.<br>False: Disabled - Function PortSetPinDefaultModeApi () is not available. |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| | PortVersionInfoApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the API to read out the modules version information.<br>PortVersionInfoApTrue: Version info API enabled<br>False: Version info API disabled. |
| | PortDevErrorDetect | Boolean | TRUE / FALSE | Switches the Development Error Detection and Notification on or off.<br>True: Development Error Detection and Notification is enabled.<br>False: Development Error Detection and Notification is disabled. |
| | PortCriticalSectionProtection | Boolean | TRUE / FALSE | This parameter specifies if the PORT driver CPU load can be reduced by disabling the enter/exit critical section functionality by adding a precompiled configuration parameter to the PORT driver configuration.<br>True: Enables the critical section functionality for the restricted area.<br>False: Disables the critical section functionality for the restricted area. |
| | PortMaxMode | Integer | 6 | This parameter indicates maximum Alternative modes present in a Port Module. |
| | PortSetToDioAltModeApi | Boolean | TRUE / FALSE | Pre-processor switch to enable / disable the use of the function Port_SetToDioMode () and Port_SetToAlternateMode ().<br>True: Enabled - Function Port_SetToDioMode () and Port_SetToAlternateMode () is available.<br>False: Disabled - Function Port_SetToDioMode () and Port_SetToAlternateMode () is not available. |
| | PortVersionCheckExternalModules | Boolean | TRUE / FALSE | Enable / disable AUTOSAR Version check for inter-module dependencies.<br>True: AUTOSAR Version check for inter-module dependencies is enabled.<br>false: AUTOSAR Version check for inter-module dependencies is disabled |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| | PortDeviceName | Integer | RF701370A, RF701371, RF701372, RF701373, RF701374. | This parameter contains the supported device name to identify the device specific C header file through ARXML File. |

### 8.1.2 Post Build Time Configurable Parameters

**Table 8-2 Post Build Time Configurable Parameters**

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| PortConfigSet/PortGroup | PortPinDirectionChangeable | Boolean | TRUE / FALSE | Parameter to indicate if the direction is changeable on a port pin during runtime.<br>True: Port Pin direction changeable enabled.<br>False: Port Pin direction changeable disabled. |
| | PortPinDioAltModeChangeable | Boolean | TRUE / FALSE | Parameter to indicate if the mode of a port pin is changeable between DIO and Alternate during runtime by API functions Port_SetToDioMode and Port_SetToAlternateMode. Including these APIs is controlled by PortSetToDioAltModeApi.<br>True: Dio Alternate mode is changeable.<br>False: Dio Alternate mode is not changeable. |
| | PortPinModeChangeable | Boolean | TRUE / FALSE | Parameter to indicate if the mode of a port pin is changeable during runtime by API function Port_SetPinMode. Including this API is controlled by PortSetPinModeApi.<br>True: Port Pin mode is changeable.<br>False: Port Pin mode is not changeable. |
| | PortPinLevelValue | Enumeration | PORT_PIN_LEVEL_LOW / PORT_PIN_LEVEL_HIGH | Parameter to indicate port pin level value for a port pin.<br>PORT_PIN_LEVEL_LOW: Port pin Level is low.<br>PORT_PIN_LEVEL_HIGH: Port pin Level is high. |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| | PortPinInitialMode | Enumeration | DIO<br>ALT1_IN<br>ALT1_OUT<br>ALT2_IN<br>ALT2_OUT<br>ALT3_IN<br>ALT3_OUT<br>ALT4_IN<br>ALT4_OUT | Mode of the port pin for use with Port_Init() function.<br><Input name>_ALT<Alternative instance>_IN: Provides alternative instance for selected input.<br><Output name>_ALT<Alternative instance>_OUT: Provides alternative instance for selected output. |
| | PortPinDirection | Enumeration | PORT_PIN_OUT / PORT_PIN_IN | The initial direction of the pin (IN or OUT). If the direction is not changeable, the value configured here is fixed. The direction must match the pin mode.<br>PORT_PIN_IN: Port pin direction set as input.<br>PORT_PIN_OUT: Port pin direction set as output. |
| PortConfigSet/PortGroup | PortInputBufferControl | Boolean | TRUE / FALSE | This parameter is used as one of the factors to enable/disable port pins input buffer in DIO Mode (PMC=0).<br>True: Port pin's input buffer is ready to be enabled in DIO Mode.<br>False: Port pin's input buffer is disabled in DIO Mode. |
| | PortBiDirectionControl | Boolean | TRUE / FALSE | This parameter forces port pins input buffer and output buffer at the same time. If activated, the effect is valid independently from any other port settings.<br>True: Activate forced Bi-directional IO buffer of the port pin.<br>False: Deactivate forced Bi-directional IO buffer of the port pin. |
| | PortIpControl | Boolean | TRUE / FALSE | This parameter is used to enable/disable the direct IO control of port pins input buffer and output buffer.<br>true: Enables the direct IO control of port pins input buffer and output buffer by the corresponding control signals of IP_ENI3(0) and IP_ENO3(0) from internal peripheral IPs. This register is valid only in Control Mode (PMC=1).<br>False: Disables the direct IO control of port pins input buffer and output buffer. |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| | PortPullUpOption | Boolean | TRUE / FALSE | This register switches on or off the port pins pull-up resistor.<br>True: Port pin's pull-up resistor is enabled.<br>False: Port pin's pull-up resistor is disabled. |
| | PortPullDownOption | Boolean | TRUE / FALSE | This parameter switches on or off the port pins pull-down resistor.<br>True: Port pin's pull-down resistor is enabled.<br>False: Port pin's pull-down resistor is disabled. |
| | PortOpenDrainControl | Boolean | TRUE / FALSE | This parameter selects port pins output buffer function as push-pull type or open drain type.<br>True: Port pin's output buffer operates as open drain driver.<br>false: Port pin's output buffer operates as push-pull driver |
| | PortOpenDrainControlExpansion | Boolean | TRUE / FALSE | This parameter selects port pins output buffer function as emulated P-ch open drain type or emulated N-ch open drain type.<br>True: Port pin's output buffer operates as emulated P-Channel open drain driver.<br>false: Port pin's output buffer operates as emulated N-Channel open drain drive |
| PortConfigSet/PortGroup | PortOutputLevelInversion | Boolean | TRUE / FALSE | Parameter to indicate if the mode of a port pin is changeable between DIO and Alternate during runtime by API functions Port_SetToDioMode and Port_SetToAlternateMode. Including these APIs is controlled by PortSetToDioAltModeApi.<br>True: Dio Alternate mode is changeable.<br>False: Dio Alternate mode is not changeable. |
| | PortDriveStrengthControl | Enumeration | SLOW / FAST | Parameter to indicate if the mode of a port pin is changeable during runtime by API function Port_SetPinMode. Including this API is controlled by PortSetPinModeApi.<br>True: Port Pin mode is changeable.<br>False: Port Pin mode is not changeable. |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| | PortUniversalCharacteristicCntrl | Boolean | TRUE / FALSE | This parameter selects the port pins output drive strength as high or low type.<br>The PortDriveStrengthControl must be enabled for this feature.<br>False: PortDriveStrengthControl parameter specifies the output driver strength of the port pin.<br>true : Number of output buffer characteristics selection capability is expanded,<br>the maximum of 4 characteristics selection is possible<br>PUCCn PDSCn<br>0 0 Output characteristic selection 1 (400 Ohm buffer)<br>0 1 Output characteristic selection 2 (200 Ohm buffer)<br>1 0 Output characteristic selection 3 (100 Ohm buffer)<br>1 1 Output characteristic selection 4 (50 Ohm buffer) |
| | PortInputBufferSelection | Enumeration | TYPE1_SHMT1<br>TYPE2_SHMT4<br>TYPE3_TTL | This setting specifies the input buffer characteristics.<br>TYPE1_SHMT1: TYPE 1 buffer is selected.<br>TYPE2_SHMT4: TYPE 2 buffer is selected.<br>TYPE3_TTL: TYPE 3 buffer is selected. |
| PortFilterGroupConfig/ PortAnalog FilterGroup | PortAnalogFilterBypass | Boolean | TRUE / FALSE | This parameter enables/disables bypass control. |
| | PortEdgeOrLevelControl | Enumeration | FALLING_EDGE_FCLA<Instance>_CTL<Instance><br>RISING_EDGE_FCLA<Instance>_CTL<Instance><br>HIGH_LEVEL_FCLA<Instance>_CTL<Instance><br>LOW_LEVEL_FCLA<Instance>_CTL<Instance><br>BOTH_EDGES_FCLA<Instance>_CTL<Instance><br>BOTH_EDGES_DISABLED | This parameter specifies the mode selection. |

| Container Name | Parameter Name | Parameter Type | Parameter Range | Parameter Description |
|---|---|---|---|---|
| PortFilterGroupConfig/ PortDigitalFilterGroup | PortSameLevelSamples | Boolean | TRUE / FALSE | This parameter specifies the number of same level samples, i.e. the number of samples with the same level to judge an external signal pulse as valid. |
| | PortSamplingClockFrequency | Enumeration | TRUE / FALSE | This parameter specifies the Digital filter sampling clock frequency. |
| | PortDigitalFilterEnableInput0 to n | Enumeration | FIXED_LOW_LEVEL<br>BYPASSED_CTL<Instance><br>Instance varies as FCLAmCTLn | This parameter enables/disables PortDigitalFilterEnableInput for the signal. |
| | PortDigitalFilterEdgeControl0 to n | Enumeration | DISABLED<br>RISING_FCLA<Instance>_CTL<Instance><br>FALLING_FCLA<Instance>_CTL<Instance><br>BOTH_EDGES_FCLA<Instance>_CTL<Instance><br><br>Instance varies as FCLAmCTLn | This parameter enables/disables PortDigitalFilterEdgeControl for the signal. |
| | PortDigitalFilterBypass0 to n | Enumeration | BYPASS_ENABLED: Bypass functionality enabled.<br>DISABLED: Bypass functionality disabled | This parameter enables/disables bypass control. |

**Table 8-3 Port Modes Description**

| Sl.No | Modes |
|---|---|
| 1 | GTM0I6_ALT1_IN |
| 2 | GTMAT0O2_ALT1_OUT |
| 3 | SENT0RX_ALT3_IN |
| 4 | CSIH0CSS1_ALT3_OUT |
| 5 | CSIH0CSS5_ALT4_OUT |
| 6 | GTM0I3_ALT1_IN |
| 7 | GTMAT0O3N_ALT1_OUT |
| 8 | SENT1RX_ALT3_IN |
| 9 | CSIH1CSS6_ALT3_OUT |
| 10 | CSIH0CSS6_ALT4_OUT |
| 11 | GTM0I2_ALT1_IN |
| 12 | GTMAT1O1_ALT1_OUT |
| 13 | CSIH0CSS4_ALT3_OUT |
| 14 | CSIH2CSS2_ALT2_OUT |
| 15 | GTMAT0O0_ALT1_OUT |
| 16 | CSIH0CSS3_ALT3_OUT |
| 17 | CSIH2CSS4_ALT2_OUT |
| 18 | GTM1I0_ALT1_IN |
| 19 | GTM1I0_ALT1_IN |
| 20 | GTM1I0_ALT1_IN |
| 21 | CSIH1CSS2_ALT3_OUT |
| 22 | CSIH2CSS5_ALT2_OUT |
| 23 | GTM1I0_ALT1_IN |
| 24 | GTMAT1O0_ALT1_OUT |
| 25 | INTP3_ALT2_IN |
| 26 | CSIH1CSS1_ALT4_OUT |
| 27 | CSIH2CSS6_ALT2_OUT |
| 28 | CSIH2CSS7_ALT2_OUT |
| 29 | CSIH1CSS0_ALT4_OUT |
| 30 | MCAN1RX_ALT2_IN |

| Sl.No | Modes |
|---|---|
| 201 | GTMAT1O0_ALT1_OUT |
| 202 | CSIH1RYI_ALT2_IN |
| 203 | CSIH1RYO_ALT2_OUT |
| 204 | SENT4RX_ALT3_IN |
| 205 | MCAN0RX_ALT4_IN |
| 206 | GTMAT0O4_ALT1_OUT |
| 207 | MCAN0TX_ALT4_OUT |
| 208 | GTMAT0O5_ALT1_OUT |
| 209 | INTP4_ALT2_IN |
| 210 | CSIH3CSS0_ALT2_OUT |
| 211 | CSIH1SI_ALT3_IN |
| 212 | HSURT0SDIO0I_ALT4_IN |
| 213 | HSURT0SDIO0O_ALT4_OUT |
| 214 | GTM0I5_ALT1_IN |
| 215 | CSIH3SCI_ALT2_IN |
| 216 | CSIH3SCO_ALT2_OUT |
| 217 | CSIH1DCS_ALT3_IN |
| 218 | CSIH1SO_ALT3_OUT |
| 219 | HSURT0SDIO1I_ALT4_IN |
| 220 | HSURT0SDIO1O_ALT4_OUT |
| 221 | GTM0I4_ALT1_IN |
| 222 | GTMAT0O3_ALT1_OUT |
| 223 | CSIH3SI_ALT2_IN |
| 224 | HSURT0SDIO2I_ALT4_IN |
| 225 | HSURT0SDIO2O_ALT4_OUT |
| 226 | GTM0I0_ALT1_IN |
| 227 | GTMAT1O3_ALT1_OUT |
| 228 | CSIH3DCS_ALT2_IN |
| 229 | CSIH3SO_ALT2_OUT |
| 230 | HSURT0SDIO3I_ALT4_IN |

| Sl.No | Modes |
|---|---|
| 31 | CSIH0SI_ALT3_IN |
| 32 | CSIH1DCS_ALT4_IN |
| 33 | CSIH1SCO_ALT4_OUT |
| 34 | MCAN1TX_ALT2_OUT |
| 35 | CSIH0SCI_ALT3_IN |
| 36 | CSIH1SC1_ALT4_IN |
| 37 | CSIH0DCS_ALT3_IN |
| 38 | CSIH0SO_ALT3_OUT |
| 39 | EXTCLK1O_ALT2_OUT |
| 40 | CSIH1SI_ALT4_IN |
| 41 | CSIH3CSS3_ALT2_OUT |
| 42 | GTMAT0O1N_ALT1_OUT |
| 43 | CSIH1CSS0_ALT2_OUT |
| 44 | CSIH2SCI_ALT3_OUT |
| 45 | CSIH2SCO_ALT3_IN |
| 46 | HSURT0SCKI_ALT4_IN |
| 47 | HSURT0SCKO_ALT4_OUT |
| 48 | CSIH1CSS2_ALT2_OUT |
| 49 | CSIH2DCS_ALT3_IN |
| 50 | CSIH2SO_ALT3_OUT |
| 51 | HSURT0CSI_ALT4_IN |
| 52 | HSURT0CSO_ALT4_OUT |
| 53 | GTMAT0O2N_ALT1_OUT |
| 54 | GTM0I4_ALT2_IN |
| 55 | CSIH2CSS1_ALT2_OUT |
| 56 | CSIH1SCI_ALT3_IN |
| 57 | CSIH1SCO_ALT3_OUT |
| 58 | CSIH2SCO_ALT3_OUT |
| 59 | HSURT0SDIR_ALT4_OUT |
| 60 | GTM0I5_ALT2_IN |
| 61 | GTMAT0O5_ALT2_OUT |

| Sl.No | Modes |
|---|---|
| 231 | HSURT0SDIO3O_ALT4_OUT |
| 232 | GTM1I6_ALT1_IN |
| 233 | GTMAT2O4_ALT1_OUT |
| 234 | CSIH3CSS1_ALT2_OUT |
| 235 | GTMAT1O4_ALT1_OUT |
| 236 | CSIH3CSS2_ALT2_OUT |
| 237 | ESO2_BAR_ALT3_IN |
| 238 | CSIH1CSS7_ALT3_OUT |
| 239 | GTM1I4_ALT1_IN |
| 240 | GTMAT1O5_ALT1_OUT |
| 241 | RLIN30TX_ALT1_OUT |
| 242 | INTP5_ALT2_IN |
| 243 | CSIH0CSS2_ALT2_OUT |
| 244 | MTTCAN0TX_ALT3_OUT |
| 245 | HSURT1SCKI_ALT4_IN |
| 246 | HSURT1SCKO_ALT4_OUT |
| 247 | CSIH0CSS3_ALT2_OUT |
| 248 | EXTCLK0O_ALT3_OUT |
| 249 | HSURT1CSO_ALT4_OUT |
| 250 | CSIH0CSS4_ALT2_OUT |
| 251 | RLIN30RX_ALT3_IN |
| 252 | HSURT1SDIR_ALT4_OUT |
| 253 | GTM1I7_ALT1_IN |
| 254 | CSIH2RYI_ALT2_IN |
| 255 | CSIH2RYO_ALT2_OUT |
| 256 | RLIN30TX_ALT3_OUT |
| 257 | CSIH3CSS3_ALT4_OUT |
| 258 | GTMAT1O3N_ALT1_OUT |
| 259 | CSIH0CSS0_ALT3_OUT |
| 260 | CSIH0CSS7_ALT4_OUT |
| 261 | EXTCLK0O_ALT2_OUT |

| Sl.No | Modes |
|---|---|
| 62 | CSIH2SI_ALT3_IN |
| 63 | CSIH0SS0_ALT3_OUT |
| 64 | HSURT1SDIO0I_ALT4_IN |
| 65 | HSURT1SDIO0O_ALT4_OUT |
| 66 | ESO0Z_ALT2_IN |
| 67 | RLIN31RX_ALT3_IN |
| 68 | SENT0SPCO_ALT3_OUT |
| 69 | HSURT1SDIO1I_ALT4_IN |
| 70 | HSURT1SDIO1O_ALT4_OUT |
| 71 | RLIN31TX_ALT3_OUT |
| 72 | HSURT1SDIO2I_ALT4_IN |
| 73 | HSURT1SDIO2O_ALT4_OUT |
| 74 | RLIN30RX_ALT2_IN |
| 75 | CSIH2CSS3_ALT2_OUT |
| 76 | MTTCAN0RX_ALT3_IN |
| 77 | CSIH1SS1_ALT3_OUT |
| 78 | HSURT1SDIO3I_ALT4_IN |
| 79 | HSURT1SDIO3O_ALT4_OUT |
| 80 | GTM1I2_ALT1_IN |
| 81 | ETH0MDC_ALT2_OUT |
| 82 | FLX0TXDB_ALT4_OUT |
| 83 | ETH0CRS_ALT2_IN |
| 84 | RLIN30TX_ALT2_OUT |
| 85 | CSIH0CSS2_ALT3_OUT |
| 86 | FLX0TXDA_ALT4_OUT |
| 87 | ETH0TXER_ALT2_OUT |
| 88 | INTP7_ALT3_IN |
| 54 | GTM0I4_ALT2_IN |
| 55 | CSIH2CSS1_ALT2_OUT |
| 56 | CSIH1SCI_ALT3_IN |
| 92 | CSIH1CSS4_ALT3_OUT |

| Sl.No | Modes |
|---|---|
| 262 | GTMAT0O6_ALT1_OUT |
| 263 | SENT3SPCO_ALT3_OUT |
| 264 | GTM0I7_ALT1_IN |
| 265 | GTMAT0O7_ALT1_OUT |
| 266 | ETH0LINKSTA_ALT2_IN |
| 267 | SENT4SPCO_ALT3_OUT |
| 268 | CSIH3CSS1_ALT3_OUT |
| 269 | FLX0RXDA_ALT4_IN |
| 270 | ETH0MDI_ALT2_IN |
| 271 | ETH0MDO_ALT2_OUT |
| 272 | CSIH3CSS2_ALT3_OUT |
| 273 | FLX0RXDB_ALT4_IN |
| 274 | GTM1I5_ALT1_IN |
| 275 | FLX0STPWT_ALT4_IN |
| 276 | CSIH1CSS3_ALT3_OUT |
| 277 | SENT2SPCO_ALT4_OUT |
| 278 | ETH0COL_ALT2_IN |
| 279 | INTP6_ALT3_IN |
| 280 | FLX0TXENA_ALT4_OUT |
| 281 | GTM01I0_ALT1_IN |
| 282 | ETH0WOL_ALT2_OUT |
| 283 | SENT1RX_ALT4_IN |
| 284 | BHPDGRCLK1_ALT4_OUT |
| 285 | ETH0CLK1O_ALT2_OUT |
| 286 | CSIH2SSI_BAR_ALT3_IN |
| 287 | CSIH2CSS0_ALT3_OUT |
| 288 | CSIH0CSS3_ALT4_OUT |
| 254 | CSIH2RYI_ALT2_IN |
| 255 | CSIH2RYO_ALT2_OUT |
| 256 | RLIN30TX_ALT3_OUT |
| 292 | INTP1_ALT2_IN |

| Sl.No | Modes |
|---|---|
| 93 | SENT1SPCO_ALT4_OUT |
| 94 | GTMAT0O1_ALT1_OUT |
| 95 | ETH0TXD1_ALT2_OUT |
| 96 | CSIH1CSS5_ALT3_OUT |
| 97 | ETH0TXD2_ALT2_OUT |
| 98 | SENT2RX_ALT4_IN |
| 99 | ETH0TXD3_ALT2_OUT |
| 100 | ETH0REF50CK_ALT2_IN |
| 101 | SENT3RX_ALT4_IN |
| 102 | ETH0TXEN_ALT1_OUT |
| 103 | MCAN0RX_ALT3_IN |
| 104 | FLX0RXDA_INTP10_ALT4_IN |
| 105 | ETH0RXER_ALT2_IN |
| 106 | MCAN0TX_ALT3_OUT |
| 107 | RLIN30TX_ALT4_OUT |
| 108 | ETH0TXCLK_ALT2_IN |
| 109 | CSIH1SSI_BAR_ALT3_IN |
| 110 | CSIH1SS0_ALT3_OUT |
| 111 | ETH0RXCLK_ALT2_IN |
| 112 | GTMAT0O0N_ALT1_OUT |
| 113 | ETH0RXD0_ALT2_IN |
| 114 | ETH0RXD1_ALT2_IN |
| 115 | ETH0RXD2_ALT2_IN |
| 116 | RLIN30RX_ALT4_IN |
| 117 | ETH0RXD3_ALT2_IN |
| 118 | ETH0RXDV_ALT2_IN |
| 119 | INTP0_ALT3_IN |
| 120 | BHPDGRCLK0_ALT4_OUT |
| 121 | SENT5SPCO_ALT3_OUT |
| 122 | CSIH2SCI_ALT4_IN |
| 123 | CSIH2SCO_ALT4_OUT |
| 124 | EXTCLK1O_ALT3_OUT |

| Sl.No | Modes |
|---|---|
| 293 | ADTRG1_ALT4_IN |
| 294 | CSIH1CSS5_ALT4_OUT |
| 295 | CSIH0CSS5_ALT2_OUT |
| 296 | SENT2RX_ALT3_IN |
| 297 | ESO1Z_ALT4_IN |
| 298 | CSIH2CSS7_ALT4_OUT |
| 299 | GTMAT1O0N_ALT1_OUT |
| 300 | CSIH0CSS6_ALT2_OUT |
| 301 | SENT3RX_ALT3_IN |
| 302 | EXTCLK1O_ALT4_OUT |
| 303 | CSIH2CSS2_ALT4_OUT |
| 304 | CSIH0CSS1_ALT2_IN |
| 305 | CSIH2CSS3_ALT4_OUT |
| 306 | CSIH0SSI_BAR_ALT2_IN |
| 307 | CSIH0CSSO0_ALT2_OUT |
| 308 | ADTRG0_ALT3_IN |
| 309 | ADCA1CNV_ALT3_OUT |
| 310 | RLIN31RX_ALT4_IN |
| 311 | CSIH0DCS_ALT2_IN |
| 312 | CSIH0SO_ALT2_OUT |
| 313 | ADCA0CNV_ALT3_OUT |
| 314 | RLIN31TX_ALT4_OUT |
| 315 | CSIH0SCI_ALT2_IN |
| 316 | CSIH0CSO_ALT2_OUT |
| 317 | CSIH2DCS_ALT4_IN |
| 318 | CSIH2SO_ALT4_OUT |
| 319 | CSIH0SI_ALT2_IN |
| 320 | NMI_ALT3_IN |
| 321 | GTMAT2O0N_ALT1_OUT |
| 322 | CSIH3SCO_ALT3_OUT |
| 323 | HSURT3CSI_ALT4_IN |
| 324 | HSURT3CSO_ALT4_OUT |

| Sl.No | Modes |
|---|---|
| 125 | CSIH0RYI_ALT4_IN |
| 126 | CSIH0RYO_ALT4_OUT |
| 127 | MCAN1TX_ALT3_OUT |
| 128 | CSIH1CSS3_ALT4_OUT |
| 129 | MCAN1RX_ALT3_IN |
| 130 | CSIH2SI_ALT4_IN |
| 131 | CSIH2CSS3_ALT3_OUT |
| 132 | SENT2RX_ALT2_IN |
| 133 | INTP2_ALT3_IN |
| 134 | MTTCAN0TX_ALT2_OUT |
| 135 | CSIH2CSS0_ALT4_OUT |
| 136 | MTTCAN0RX_ALT2_IN |
| 137 | CSIH0CSS4_ALT4_OUT |
| 138 | CSIH1CSS6_ALT4_OUT |
| 139 | HSURT2DIR_ALT2_OUT |
| 140 | CSIH1CSS7_ALT4_OUT |
| 141 | HSURT2CSI_ALT2_IN |
| 142 | HSURT2CSO_ALT2_OUT |
| 143 | SENT5RX_ALT3_IN |
| 144 | HSURT2SCKI_ALT2_IN |
| 145 | HSURT2SCKO_ALT2_OUT |
| 146 | INTP9_ALT3_IN |
| 147 | GTMAT2O3_ALT1_OUT |
| 148 | HSURT2SDIO3I_ALT2_IN |
| 149 | HSURT2SDIO3O_ALT2_OUT |
| 150 | HSURT2SDIO2I_ALT2_IN |
| 151 | HSURT2SDIO2O_ALT2_OUT |
| 152 | SENT6SPCO_ALT3_OUT |
| 153 | HSURT2SDIO1I_ALT2_IN |
| 154 | HSURT2SDIO1O_ALT2_OUT |
| 155 | SENT7SPCO_ALT3_OUT |

| Sl.No | Modes |
|---|---|
| 325 | GTMAT2O0_ALT1_OUT |
| 326 | CSIH3CSS0_ALT3_OUT |
| 327 | HSURT3SCKI_ALT4_IN |
| 328 | HSURT3SCKO_ALT4_OUT |
| 329 | GTMAT1O7_ALT1_OUT |
| 330 | HSURT3SDIO3I_ALT4_IN |
| 331 | HSURT3SDIO3O_ALT4_OUT |
| 332 | GTMAT1O6_ALT1_OUT |
| 333 | HSURT3SDIO2I_ALT4_IN |
| 334 | HSURT3SDIO2O_ALT4_OUT |
| 335 | HSURT3SDIO1I_ALT4_IN |
| 336 | HSURT3SDIO1O_ALT4_OUT |
| 337 | HSURT3SDIO0I_ALT4_IN |
| 338 | HSURT3SDIO0O_ALT4_OUT |
| 339 | SENT7RX_ALT3_IN |
| 340 | MEMC0A0_ALT3_OUT |
| 341 | CSIH3RYI_ALT4_IN |
| 342 | CSIH3RYO_ALT4_OUT |
| 343 | FLX1TXENB_ALT2_OUT |
| 344 | SENT6RX_ALT3_IN |
| 345 | ETH1MDC_ALT3_OUT |
| 346 | FLX1RXDB_ALT2_IN |
| 347 | ETHCOL_ALT3_IN |
| 348 | MEMC0RD_BAR_ALT4_OUT |
| 349 | FLX1TXDB_ALT3_OUT |
| 350 | ETHLINKSTA_ALT3_IN |
| 351 | MEMC0WR_BAR_ALT4_OUT |
| 352 | ETH1RXDV_ALT3_IN |
| 353 | CSIH3CSS7_ALT3_OUT |
| 354 | RLIN32RX_ALT4_IN |
| 355 | FLX1TXDA_ALT2_OUT |

| Sl.No | Modes |
|---|---|
| 156 | GTMAT2O1N_ALT1_OUT |
| 157 | HSURT2SDIO0I_ALT2_IN |
| 158 | HSURT2SDIO0O_ALT2_OUT |
| 159 | GTMAT2O1_ALT1_OUT |
| 160 | HSURT3SDIR_ALT4_OUT |
| 161 | FLX1RXDA_ALT2_IN |
| 162 | INTP11_ALT3_IN |
| 163 | CSIH3CSS4_ALT3_OUT |
| 164 | MEMC0CS1_BAR_ALT4_OUT |
| 165 | ETH1WOL_ALT3_OUT |
| 166 | MEMC0CS2_BAR_ALT4_OUT |
| 167 | FLX1STPWT_ALT3_IN |
| 168 | MEMC0CS3_BAR_ALT4_OUT |
| 169 | ETH1RXD3_ALT2_IN |
| 170 | MEMC0A1_ALT3_OUT |
| 171 | CSIH3DCS_ALT4_IN |
| 172 | CSIH3SO_ALT4_OUT |
| 173 | ETH1RXD2_ALT2_IN |
| 174 | MEMC0A2_ALT3_OUT |
| 175 | CSIH3SI_ALT4_IN |
| 176 | ETH1CRS_ALT2_IN |
| 177 | MEMC0A3_ALT3_OUT |
| 178 | CSIH3SSI_BAR_ALT4_IN |
| 179 | CSIH3CSS0_ALT4_OUT |
| 180 | GTMAT2O3N_ALT1_OUT |
| 181 | ETH1RXER_ALT2_IN |
| 182 | MEMC0A4_ALT3_OUT |
| 183 | CSIH3SCI_ALT4_IN |
| 184 | CSIH3SCO_ALT4_OUT |
| 185 | ETH1RXD1_ALT2_IN |
| 186 | MEMC0A5_ALT3_OUT |

| Sl.No | Modes |
|---|---|
| 356 | CSIH3CSS6_ALT3_OUT |
| 357 | RLIN32TX_ALT4_OUT |
| 358 | FLX1TXENA_ALT2_OUT |
| 359 | CSIH3CSS5_ALT3_OUT |
| 360 | MEMC0CS0_BAR_ALT4_OUT |
| 361 | SENT0RX_ALT4_IN |
| 362 | MEMC0D1I_ALT3_IN |
| 363 | MEMC0D1O_ALT3_OUT |
| 364 | MTTCAN0EVT_ALT4_IN |
| 365 | ETH1TXEN_ALT2_OUT |
| 366 | MEMC0D2I_ALT3_IN |
| 367 | MEMC0D2O_ALT3_OUT |
| 368 | MTTCAN0SOC_ALT4_OUT |
| 369 | ETH1TXD1_ALT2_OUT |
| 370 | MEMC0D3I_ALT3_IN |
| 371 | MEMC0D3O_ALT3_OUT |
| 372 | MTTCAN0TMP_ALT4_OUT |
| 373 | ETH1TXD2_ALT2_OUT |
| 374 | MEMC0D4I_ALT3_IN |
| 375 | MEMC0D4O_ALT3_OUT |
| 376 | MTTCAN0RTP_ALT4_OUT |
| 377 | GTMAT2O2_ALT1_OUT |
| 378 | ETH1TXD3_ALT2_OUT |
| 379 | MEMC0D5I_ALT3_IN |
| 380 | MEMC0D5O_ALT3_OUT |
| 381 | GTMAT2O2N_ALT1_OUT |
| 382 | ETH1TXER_ALT2_OUT |
| 383 | MEMC0D6I_ALT3_IN |
| 384 | MEMC0D6O_ALT3_OUT |
| 385 | ETH1MD1_ALT2_IN |
| 386 | ETH1MDO_ALT2_OUT |

| Sl.No | Modes |
|---|---|
| 187 | GTMT1I4_ALT1_IN |
| 188 | ETH1RXD0_ALT2_IN |
| 189 | MEMC0A6_ALT3_OUT |
| 190 | ETH1RXCLK_ALT2_IN |
| 191 | MEMC0A7_ALT3_OUT |
| 192 | MCAN0TXFD_ALT4_OUT |
| 193 | ETH1TXCLK_ALT2_IN |
| 194 | MEMC0A8_ALT3_OUT |
| 195 | MCAN0RXFD_ALT4_OUT |
| 196 | ETH1REF50CK_ALT2_IN |
| 197 | MEMC0D0I_ALT3_IN |
| 198 | MEMC0D0O_ALT3_OUT |
| 199 | MTTCAN0SWT_ALT4_IN |
| 200 | ETH1TXD0_ALT2_OUT |

| Sl.No | Modes |
|---|---|
| 387 | MEMC0D7I_ALT3_IN |
| 388 | MEMC0D7O_ALT3_OUT |
| 389 | SENT8SPCO_ALT4_OUT |
| 390 | SENT8RX_ALT4_IN |
| 391 | RLIN33TX_ALT4_OUT |
| 392 | RLIN33RX_ALT4_IN |
| 393 | SENT9SPCO_ALT4_OUT |
| 394 | SENT9RX_ALT4_IN |
| 395 | MCAN2TX_ALT2_OUT |
| 396 | MCAN2RX_ALT3_IN |
| 397 | FLSCI3RXD_ALT3_IN_SUPP_PFC_PMCSR |
| 398 | FLSCI3TXD_ALT3_OUT_SUPP_PFC_PMCSR |
| 399 | DIO_SUPP_PFC_PMCSR |

# Chapter 9 Messages

The messages help to identify the syntax or semantic errors in the ECU Configuration Description File. Hence it ensures validity and correctness of the information available in the ECU Configuration Description File.

The following section gives the list of error, warning and information messages displayed by the mcal code generator tool.

## 9.1 Error Messages

**ERR_59_124_001: Parameter PortPinModeChangeable should not be configured as true in the path /Renesas/EcucDefs_Port/Port0/ PortConfigSet0/PortGroup10/PortPin10 as the parameter PortSetPinModeApi is set false.**

This error occurs when ‘PortPinModeChangeable’ is set as true and ’PortSetPinModeApi’ is set as false

**ERR_59_124_002: Number of fields is not same for the entity Structure Port_GstConfiguration. At least one DNFA instance shall be configured in in PortConfigSet0 across MultiConfigSet.**
This error occurs when Number of fields is not same for the entity Structure Port_GstConfiguration

**ERR_59_124_003: PortGroup${GrpInst}0 is not configured in PortConfigSet${ConfigSet}, PortGroups configured shall not be different across MultiConfigSet.**

This error occurs when any of the PortGroup is not configured and if PortGroups configured different across MultiConfigSet

**ERR_59_124_004: Configured PortPins of the PortGroup00 does not match, PortPins of a PortGroup shall remain alike across MultiConfigSet.**

This error occurs when PortPin not Present in a PortGroup, and if the PortPins of a PortGroup different across MultiConfigSet

**ERR_59_124_005: Number of fields is not same for the entity Structure Port_GstConfiguration. At least one FCLA instance shall be configured in PortConfigSet0 across MultiConfigSet.**

This error occurs when Number of fields is not same for the entity Structure ‘’Port_GstConfiguration

**ERR_59_124_006: Parameter PortPinDirectionChangeable should not be configured as true in the Path Renesas/EcucDefs_Port/Port0/ PortConfigSet/PortGroup/PortPin, as parameter PortSetPinDirectionApi is set false.**

This error occurs when ‘PortPinDirectionChangeable’ is set as true and ’PortSetPinDirectionApi’ is set as false

**ERR_59_124_007: Parameter PortPinDioAltModeChangeable should not be configured as true in the path /Renesas/EcucDefs_Port/Port/**

**PortConfigSet/PortGroup/PortPin, as parameter PortSetToDioAltModeApi is set false.**

This error occurs when ‘PortPinDioAltModeChangeable’ is set as true and’ PortSetToDioAltModeApi’ is set as false

**ERR_59_124_009 : The value for parameter PortInputBufferControl of the Port Group Container should not be configured as <true> in the path /Renesas/EcucDefs_Port/Port/PortConfigSet/PortGroup/PortPin as the value configured for parameter PortPinInitialMode of the same container is configured as <PORT_PIN_OUT>.**

This error occurs when ‘PortInputBufferControl’ is set as false and ’PortPinInitialMode’ is set as output mode.

**ERR_59_124_010 : Value of the parameter PortPinInitialMode of Port Group container Port Pin container support only DIO_SUPP_PFCE_PMCSR mode in $PortPinPath, Hence the parameter PortPinDioAltModeChangeable of same container shall not be configured as <true>.**

This error occurs when ‘PortPinInitialMode’ is set as DIO_SUPP_PFCE_PMCSR and ’PortPinDioAltModeChangeable’ is set as true

**ERR_59_124_011: $PortGrpShortNameCmp is repeated in PortGroup${GrpInst} and PortGroup$ContInst.**

This error occurs when ‘$PortGrpShortNameCmp is repeated in PortGroup${GrpInst} and PortGroup$ContInst.

**ERR_59_124_012: $PortShortNameCmp is repeated in PortGroup${GrpInst} PortPin$PinInst and PortGroup$ContInst PortPin$PinInstance.**

This error occurs when $PortShortNameCmp is repeated in PortGroup${GrpInst} PortPin$PinInst and PortGroup$ContInst PortPin$PinInstance**.**

**ERR_59_124_013: Parameter PortPinInitialMode of the container PortGroup9 PortPin7 should not be configured as 'MCAN2TX_ALT2_OUT' since the device $DeviceVariant does not support 'MCAN2TX_ALT2_OUT' alternative mode.**

This error occurs when PortDeviceName is R7F701372, and PortPinInitialMode of the container PortGroup9 PortPin7 configured as 'MCAN2TX_ALT2_OUT'

**ERR_59_124_014: The configured value of the parameter 'PortPinInitialMode' of the container 'PortGroup${GrpInst}0_PortPin${PinInst}' is incorrect, since the parameter 'PortIpControl' is configured as <true> and 'PortPinInitialMode' is configured as <$FullPortPinInitialMode>**

This error occurs when parameter 'PortIpControl' is true and PortPinInitialMode is not an alternative function of the Port IP Control Register

**ERR_59_124_016: The value configured for the parameter 'PortWriteVerifyErrorInterface' should follow C Syntax <[a-zA-Z][a-zA-Z0-9_]>.**

This error occurs when the Port callback Notification function name for the parameter 'PortWriteVerifyErrorInterface' is not followed the C Syntax <[a-zA-Z][a-zA-Z0-9_]>.

**ERR_59_124_017: The parameter '$paramlist' in the container 'PortConfigSet$ConfigSetCnt PortGroup${GrpInst}0 PortPin${PinInst}' should be configured.**

This error occurs when a particular parameter is not configured.

**ERR_59_124_019: As write-verify check is enabled through the parameter PortWriteVerify in PortGeneral container, PORT_E_REG_WRITE_VERIFY in PortDemEventParameterRefs container should be configured.**

This error occurs when the parameter PortWriteVerify is enabled in PortGeneral and PORT_E_REG_WRITE_VERIFY in PortDemEventParameterRefs container is not configured.

**ERR_59_124_020: As write-verify check is enabled through the parameter PortWriteVerify in PortGeneral container and PortUseWriteVerifyErrorInterface is configured as true, PortWriteVerifyErrorInterface should have valid error notification.**

This error occurs when the parameter PortWriteVerify in PortGeneral container and PortUseWriteVerifyErrorInterface is configured as true, but PortWriteVerifyErrorInterface not have any valid error notification.

**ERR_59_124_021 References path of Parameter PORT_E_REG_WRITE_VERIFY $CbkPort_E_Reg_Verify is not correct in PortDemEventParameterRefs container.**

This error occurs when the incorrect Dem reference path is configured for PORT_E_REG_WRITE_VERIFY parameter.

**ERR_59_124_022: As write-verify check is disabled via the parameter PortWriteVerify, PortUseWriteVerifyErrorInterface parameter should not be configured as true in PortGeneral Container.**

This error occurs when the write-verify check is disabled via the parameter PortWriteVerify, and PortUseWriteVerifyErrorInterface parameter is not configured as true in PortGeneral Container.

**ERR_59_124_024: The Short name of 'PortGroup${GrpInst}0' container should be same across all configuration sets.**

This error occurs when the short name of the Port Group container is different across the all configuration sets.

**ERR_59_124_025: The Short name of 'PortGroup${GrpInst}0 -> PortPin${PinInst}0' container should be same across all configuration sets.**

This error occurs when the short name of the Port Pin is different across the all configuration sets.

**ERR_59_124_026: None of the Port Group is configured. At least any one of the PORT GROUP should be configured.**

This error occurs when none of the Port group is configured.

**ERR_59_124_027: The parameters 'PortPullUpOption' and 'PortPullDownOption' from $PortPinPath container should not be configured as <true> at the same time**

This error occurs when both the parameters ‘PortPullUpOption’ and 'PortPullDownOption' configured as true.

**ERR_59_124_028: The configured Device Name for parameter PortDeviceName: '$DeviceVariant' in the container $PortInstName/PortGeneral0 is invalid.**

This error occurs when configured device variant name is incorrect.

**ERR_59_124_029: The value for parameter 'PortSetPinDefaultDirectionApi' from PortGeneral0 container should not be configured as <true> as the value for parameter 'PortSetPinDirectionApi' in the container PortGeneral0 is configured as <false>.**

**Path:/Renesas/EcucDefs_Port/Port/PortGeneral0**

This error occurs when configured 'PortSetPinDefaultDirectionApi' parameter is true but ‘PortSetPinDirectionApi’ parameter is false in general container.

**ERR_59_124_030: The value for parameter 'PortSetPinDefaultModeApi' from PortGeneral0 container should not be configured as <true> as the value for parameter 'PortSetPinModeApi' in the container PortGeneral0 is configured as <false>.**

**Path:/Renesas/EcucDefs_Port/Port/PortGeneral0**

This error occurs when configured 'PortSetPinDefaultModeApi' parameter is configured as true but ‘'PortSetPinModeApi' parameter is false in general container.

## 9.2 Warning Messages

**WARNING_59_124_001: The parameter PortPinDirection of container Port Group container should not be configured as <PORT_PIN_OUT> in the path /Renesas/EcucDefs_Port/Port0/PortConfigSet/PortGroup/PortPin , since the parameter PortPinInitialMode of the same Port Group container is configured as an Input type mode. The value for parameter PortPinDirection is considered as <PORT_PIN_IN>.**

This warning occurs when PortPinDirection parameter is set as output and PortPinInitialMode parameter is an input.

**WARNING_59_124_002: The parameter PortPinDirection of container Port Group container should not be configured as <PORT_PIN_IN> in the path /Renesas/EcucDefs_Port/Port0/PortConfigSet/PortGroup/PortPin, since the parameter PortPinInitialMode of the same Port Group container is configured as an Output type mode. The value for parameter PortPinDirection is considered as <PORT_PIN_OUT>.**

This warning occurs when PortPinDirection parameter is set as an input and PortPinInitialMode parameter is set as an output.

**WARNING - Checksum incorrect message should be generated.**

This Warning occurs when any vm file is corrupted.

## 9.3 Information Messages

None.

## Revision History

| Sl.No. | Description | Version | Date |
|---|---|---|---|
| 1. | Draft Version | 1.0.0 | 17-Aug-2015 |
| 2 | The following changes are made:<br>1. Compiler path modified in Section 9.3<br>2. R number is added in the last page.<br>3. Error and warning descriptions are added in section 10.1.1 | 1.0.1 | 05-Apr-2016 |
| 3 | The following changes are made:<br>1. 10.1 Error Messages updated.<br>2. Chapter 3 Code Generation Overview updated for Port_Cbk.h file<br>3. Chapter 5 Output Files updated for Port_Cbk.h file<br>4. R number is updated in the last page<br>5. Updated Chapters 1,3,4,5,6,7 by rephrasing Tool and PORT Driver Generation Tool with MCAL Code Generation Tool.<br>6. Updated description of Chapter1 introduction and table 1-1.<br>7. Updated table 2-1 Reference Documents.<br>8. Renamed the Chapter 3 heading as Code Generation Overview.<br>9. Updated the chapter 3 by adding a remark on MCAL Code Generator Tool User manual and updated figure 3-2.<br>10. Added Remark in Chapter4.<br>11. Updated the Figure 8-1, Table 8-1 and 8-2.<br>12. Updated the format of Error/Warning/Information message in the chapter Messages.<br>13. Removed Chapter 9 Generator Tool and chapter 11 Notes.<br>14. In Chapter 8, table 8-1 TRXML changed to ARXML abbreviation. | 1.0.2 | 09-Feb-2017 |
| 4 | The following changes are made:<br>1. ERR_59_124_029 and ERR_59_124_030 are updated in section 9.1<br>2. Notice and Copyright are updated.<br>3. R- Number is updated. | 1.0.3 | 27-Apr-2017 |
| 5. | Following change made:<br>1. R-Number updated. | 1.0.4 | 16-Jun-2017 |

# AUTOSAR MCAL R4.0.3 User's Manual
# PORT Driver Component Ver.1.0.4
# Generation Tool User's Manual

Publication Date: Rev.1.02, 16 June, 2017

Published by: Renesas Electronics Corporation

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